What is claimed is:

1. A pharmaceutical composition comprising at least one A_{2a} receptor agonist, at least one liquid carrier, and at least one co-solvent.

2. The pharmaceutical composition of claim 1 wherein the A_{2a} receptor agonist is selected from the group consisting of CVT-3033, CVT-3146, and combinations thereof.

3. The pharmaceutical composition of claim 1 wherein the liquid carrier comprises water, distilled water, de-ionized water, saline, a buffer, or combinations thereof.

4. The pharmaceutical composition of claim 1 wherein the co-solvent comprises methylboronic acid, borate buffer, propylene glycol, or polyethylene glycol.

5. The pharmaceutical composition of claim 4 wherein the co-solvent is methylboronic acid.

6. The pharmaceutical composition of claim 5 wherein the A_{2a} receptor agonist is CVT-3146.

7. The pharmaceutical composition of claim 6 wherein the CVT-3146 is present in an amount ranging from about 50 micrograms/ml to about 250 micrograms/ml and the methylboronic acid is present in an amount from about 0.4% to about 0.6% (w:v).

8. The pharmaceutical composition of claim 7 wherein the liquid carrier is at least one buffer.

9. The pharmaceutical composition of claim 8 wherein the pH of the said composition is from about 8.5 to about 10.

10. The pharmaceutical composition of claim 9 wherein the pH is from about 9.1 to about 9.4.

11. The pharmaceutical composition of claim 3 wherein the co-solvent is a borate buffer.

12. The pharmaceutical composition of claim 6 wherein the co-solvent is about 0.5% (w:v) methylboronic acid.

13. The pharmaceutical composition of claim 12 wherein said composition also comprises a buffer to bring the pH of the composition to about 9.3.

14. The pharmaceutical composition of claim13 wherein the CVT-3146 in said composition is present in an amount from about 50 to about 150 micrograms/ml.

15. The pharmaceutical composition of claim 14 wherein the said composition also comprises about 0.55% (w:v) sodium chloride and about 50 mM sodium bicarbonate.

16. The pharmaceutical composition of claim 4 wherein the co-solvent is propylene glycol and the propylene glycol is present in an amount from about 5% to about 25% (w:v).

17. The pharmaceutical composition of claim 16 wherein the propylene glycol is present in an amount from about 8% to about 20% (w:v).

18. The pharmaceutical composition of claim 17 wherein the liquid carrier includes a buffer to bring said composition to a pH of from about 6 to about 8.

19. The pharmaceutical composition of claim 18 wherein the said composition further comprises EDTA.

20. The pharmaceutical composition of claim 16 wherein the A_{2a} receptor agonist is CVT-3146 and said CVT-3146 is present in an amount from about 50 to about 150 micrograms.

21. A method of producing coronary vasodilation without peripheral vasodilation

comprising administering to a human the pharmaceutical composition of claims 1 or 5 or 16 wherein said composition contains about 10 to about 600 micrograms of at least one A_{2a} receptor agonist.

22. The method of claim 21 wherein the A_{2a} receptor agonist is CVT-3146.

23. The method of claim 22 wherein said pharmaceutical composition is administered by iv bolus.

24. The method of claim 23 wherein said pharmaceutical composition is administered in about 10 to about 20 seconds.

25. A method of myocardial perfusion imaging of a human comprising administering a radionuclide and the composition of claims 1 or 5 or 16 either simultaneously or sequentially to a human wherein the myocardium is examined for areas of insufficient blood flow following administration of the radionuclide and the composition.

26. The method of claim 25 wherein the myocardium examination begins within about 1 minute after the radionuclide and the composition are administered.

27. The method of claim 26 wherein the A_{2a} receptor agonist in said composition causes at least a 2.5 fold increase in coronary blood flow, such increase in blood flow being achieved for less than about 5 minutes.

28. The method of claim 25 wherein the A_{2a} receptor agonist in said composition is CVT-3146, which CVT-3146 is administered in an amount of from about 10 to about 600 micrograms in a single iv bolus.

29. The method of claim 28 wherein the CVT-3146 amount is from about 100 to about 500 micrograms.

30. The method of claim 28 wherein the CVT-3146 amount is about 400 micrograms.

31. The method of claim 28 wherein said composition is administered in about 10 to about 30 seconds or less.

32. A method of producing coronary vasodilation without peripheral vasodilation comprising administering at least 10 μg of at least one A_{2A} receptor agonist to a human.

33. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount that does not exceed about 1000 μg.

34. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 10 to about 600 μg.

35. The method of claim 32 wherein the A_{2A} receptor agonist is administered in a single dose.

36. The method of claim 32 wherein the A_{2A} receptor agonist is administered by iv bolus.

37. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 0.05 to about 60 μg/kg and wherein the A_{2A} receptor agonist is administered by iv bolus.

38. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 0.1 to about 30 μg/kg wherein the A_{2A} receptor agonist is administered by iv bolus.

39. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount no greater than about 20 μg/kg to a supine patient and wherein the A_{2A} receptor agonist is administered by iv bolus.

40. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount no greater than about 10 μg/kg to a standing patient wherein the A_{2A} receptor agonist is administered by iv bolus.

41. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 10 to about 600 μg wherein the wherein the A_{2A} receptor agonist is administered in about 20 seconds.

42. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 10 to about 600 μg wherein the A_{2A} receptor agonist is administered in less than about 10 seconds.

43. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount greater than about 100 μg.

44. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount no greater than 600 μ.

45. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount no greater than 500 μg.

46. The method of claim 32 wherein the A_{2A} receptor agonist is administered in an amount ranging from about 100 μg to about 500 μg.

47. The method of claim 32 wherein the A_{2A} receptor agonist is selected from the group consisting of CVT-3033, CVT-3146 and combinations thereof.

48. A method of myocardial perfusion imaging of a human, comprising administering a radionuclide and a A_{2A} receptor agonist to the human wherein the myocardium is examined for areas of insufficient blood flow following administration of the radionuclide and the A_{2A} receptor agonist.

49. The method of claim 48 wherein the myocardium examination begins within about 1 minute from the time the A_{2A} receptor agonist is administered.

50. The method of claim 48 wherein the administration of the A_{2A} receptor agonist causes at least a 2.5 fold increase in coronary blood flow.

51. The method of claim 48 wherein the administration of the A_{2A} receptor agonist causes at least a 2.5 fold increase in coronary blood flow that is achieved within about 1 minute from the administration of the A_{2A} receptor agonist.

52. The method of claim 48 wherein the radionuclide and the A_{2A} receptor agonist are administered separately.

53. The method of claim 48 wherein the radionuclide and the A_{2A} receptor agonist are administered simultaneously.

54. The method of claim 48 wherein the administration of the A_{2A} receptor agonist causes at least a 2.5 fold increase in coronary blood flow for less than about 5 minutes.

55. The method of claim 48 wherein the administration of the A_{2A} receptor agonist causes at least a 2.5 fold increase in coronary blood flow for less than about 3 minutes.

56. The method of claim 48 wherein the A_{2A} receptor agonist is CVT-3146 which is administered in an amount ranging from about 10 to about 600 μg in a single iv bolus.

57. The method of claim 56 wherein CVT-3146 is administered in an amount ranging from about 100 to about 500 μg in a single iv bolus.

58. The method of claim 48 wherein the a A_{2A} receptor agonist is CVT-3146 which is administered in a single dose in an amount ranging from 10 to about 600 μg that is independent of the weight of the human being dosed.

59. The method of claim 48 wherein the dose is administered in about 30 seconds or

less.

60. The method of claim 48 wherein the dose is administered in about 20 seconds or less.

61. The method of claim 48 wherein the A_{2A} receptor agonist is administered in a single dose.